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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,272	05/31/2001	Ruck Thawonmas	14321.31	1495
7590	07/02/2004		EXAMINER	
			CHANG, JON CARLTON	
			ART UNIT	PAPER NUMBER
			2623	
DATE MAILED: 07/02/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/871,272	THAWONMAS ET AL.	
	<b>Examiner</b> Jon Chang	<b>Art Unit</b> 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-25 is/are allowed.
- 6) Claim(s) \_\_\_\_\_ is/are rejected.
- 7) Claim(s) 25 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 31 May 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____.   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3, 4, 5, 6</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

***Specification***

1. The specification fails to comply with 37 CFR 1.52(b)(6), because the paragraph numbering does not consist of at least four numerals enclosed in square brackets, including leading zeros (e.g., [0001]).

***Claim Objections***

2. Claim 25 is objected to because of the following informalities:

Claim 25 is drawn to a “computer program product” comprising a series of steps. This is potentially ambiguous. It is suggested that the claim be amended to indicate that the computer program product comprises a computer readable medium, on which a computer program is stored, the computer program causing a computer (or the apparatus) to execute the claimed steps.

Appropriate correction is required.

***Allowable Subject Matter***

3. Claims 1-25 are allowed.

Claim 1 requires, *inter alia*, calculating a basis vector based on a steepest descent method minimizing a cost, calculating a parameter for normalizing the features using the term-document matrix and the basis vector and extracting the features on the basis of the parameter, and updating the term-document matrix to a difference between the term-document matrix to which the basis vector is not applied, and the term-document matrix to which the basis vector is applied. These features as claimed, in

combination with the other limitations of the claim, are neither disclosed nor suggested by the prior art of record. Claims 13 and 25 recites similar or analogous limitations. Claims 2-12 depend from claim 1, and claims 14-24 depend from claim 13.

#### ***References Cited***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Application Publication US 2002/0194158 to Stensmo discloses a system and method for context-dependent probabilistic modeling of words and documents.

U.S. Patent 6,611,825 Billheimer et al. discloses a method and system for text mining using multidimensional subspaces which utilizes a term frequency matrix of term frequencies of documents.

U.S. Patent 6,665,661 to Crow et al. discloses a system and method for use in text analysis of documents in which records are indexed and analyzed to produce vectors which are clustered.

U.S. Patent 6,728,728 to Spiegler et al. teaches a data mining method employing feature extraction.

"Vector Space Model of Information Retrieval: a Reevaluation" by Wong et al. teaches vector based systems for information retrieval, in which each document is represented by a vector including keywords or index terms.

"On Modeling of Information Retrieval Concepts in Vector Spaces" by Wong et al. teaches, among other things, an indexing process employing vectors, for a document collection.

"FastMap: A Fast Algorithm for Indexing, Data-Mining and Visualization of Traditional and Multimedia Datasets" by Faloutsos et al. teaches using feature extraction functions in retrieval tool for large collections of multimedia datasets.

### ***Conclusion***

This application is in condition for allowance except for the following formal matters:

Deficiency of the specification, and the objection to claim 25.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon Chang whose telephone number is (703)305-8439. The examiner can normally be reached on M-F 8:00 a.m.-6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jon Chang  
Primary Examiner  
Art Unit 2623

Jon Chang  
June 28, 2004